With the REF-43 in the boiling water bath, the gain trim, R6, in this example should be adjusted so I_{OUT} equals 14.3mA.

Once the gain trim has been completed, the offset trim can be made. Remember, that adjusting the offset trim will not affect the gain.

The offset trim can be set at any known temperature by adjusting R5 until the output current equals:

$$I_{OUT} = \left(\frac{\Delta I_{FS}}{\Delta T_{OPERATING}}\right)(T_{AMBIENT} - T_{MIN}) + 4mA$$

Using the previous example and assuming the REF-43 is at 20°C:

$$I_{OUT} = \left(\frac{16mA}{200°C}\right)\left[20°C - (-50°C)\right] + 4mA = 9.6mA$$

Table 1 shows the values of R6 and R7 required for various temperature ranges.

TABLE 1

TEMP RANGE	R6 (FIXED)	R7 (TRIMPOT)
0°C to +70°C	10k	5k
−40°C to +85°C	6k	3k
−50°C to +150°C	3k	2k

FIGURE 11: Temperature to 4-20mA Transmitter